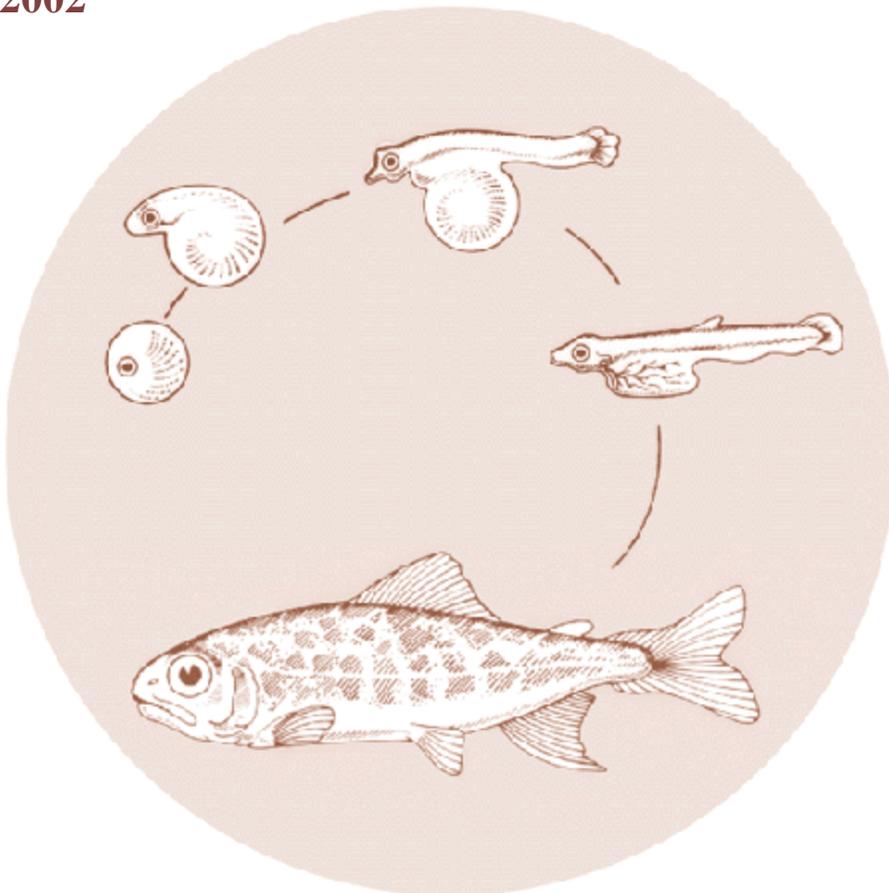


# Sherman Creek Hatchery

## Washington Department of Fish and Wildlife Fish Program

### Annual Report 2002



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Bonneville Power Administration  
P.O. Box 3621  
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**WASHINGTON DEPARTMENT  
OF  
FISH AND WILDLIFE  
FISH PROGRAM  
HATCHERIES DIVISION**

**SHERMAN CREEK HATCHERY**

**ANNUAL REPORT**

January 1, 2002 - December 31, 2002

Project No. 91-047-00

Prepared by

Mitch Combs, Hatchery Specialist 3  
Sherman Creek Hatchery  
Kettle Falls, Washington

Prepared for

U.S. Department of Energy  
Bonneville Power Administration  
Division of Fish and Wildlife  
P.O. Box 3621  
Portland, OR 97208-3621  
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## EXECUTIVE SUMMARY

Sherman Creek Hatchery's primary objective is the restoration and enhancement of the recreational and subsistence fishery in Lake Roosevelt and Banks Lake. The Sherman Creek Hatchery (SCH) was designed to rear 1.7 million kokanee fry for acclimation and imprinting during the spring and early summer. Additionally, it was designed to trap all available returning adult kokanee during the fall for broodstock operations and evaluations. Since the start of this program, the operations on Lake Roosevelt have been modified to better achieve program goals.

The Washington Department of Fish and Wildlife, Spokane Tribe of Indians and the Colville Confederated Tribe form the interagency Lake Roosevelt Hatcheries Coordination Team (LRHCT) which sets goals and objectives for both Sherman Creek and the Spokane Tribal Hatchery and serves to coordinate enhancement efforts on Lake Roosevelt and Banks Lake.

The primary changes have been to replace the kokanee fingerling program with a yearling (post smolt) program of up to 1,000,000 fish. To construct and operate twenty net pens to handle the increased production. The second significant change was to rear up to 300,000 rainbow trout fingerling at SCH from July through October, for stocking into the volunteer net pens. This enables the Spokane Tribal Hatchery (STH) to rear additional kokanee to further the enhancement efforts on Lake Roosevelt.

Current objectives include increased use of native/indigenous stocks where available for propagation into Upper Columbia River Basin Waters.

The Lake Roosevelt Fisheries Evaluation Program (LRFEP) is responsible for monitoring and evaluation on the Lake Roosevelt Projects. From 1988 to 1998, the principal sport fishery on Lake Roosevelt has shifted from walleye to include rainbow trout and kokanee salmon (Underwood et al. 1997, Tilson and Scholz 1997). The angler use, harvest rates for rainbow and kokanee and the economic value of the fishery has increased substantially during this 10-year period. The investigations on the lake also suggest that the hatchery and net pen programs have enhanced the Lake Roosevelt fishery while not negatively impacting wild and native stocks within the lake.

The 2002 Third Annual Two Rivers Trout Derby was again a great success with 529 rainbow trout and 80 kokanee salmon caught. The fishermen had a lot of praise for the volunteer net pen program and the hatchery efforts as 84% of the rainbows and 62% of the kokanee caught were of hatchery origin (Lee, 2002).

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## INTRODUCTION

Sherman Creek Hatchery is at the mouth of Sherman Creek on Lake Roosevelt, which is 3 miles west of Kettle Falls, Washington. The Bonneville Power Administration (BPA) constructed the hatchery in 1991. The Washington Department of Fish and Wildlife (WDFW) perform the operations and maintenance with funding provided by BPA. The hatchery is one of two kokanee (*Oncorhynchus nerka*) facilities provided to partially mitigate for the loss of anadromous fish habitat due to the construction of Grand Coulee Dam in 1941. The hatcheries were initiated in part by the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program. The BPA, Spokane Indian Tribe (ST), Colville Confederated Tribes (CCT), Upper Columbia United Tribes Fisheries Research Center (UCUT), Eastern Washington University (EWU), National Park Service (NPS) and the WDFW work together toward fishery enhancement on Lake Roosevelt and Banks Lake. The combined production goals of the Sherman Creek Hatchery (SCH) and the Spokane Tribal Hatchery (STH) were established at 13 million kokanee, (8 million for Lake Roosevelt and another 5 million for Banks Lake). Program changes to yearling kokanee have adjusted the numbers to 1 million yearling kokanee released annually. In addition to the kokanee, 60,000 redband rainbow trout are reared by SCH, and 500,000 rainbow trout (*Oncorhynchus mykiss*) are supplied for net pen rearing through the Volunteer Rainbow Trout Net Pen Project. Fish feed for volunteer rearing is partially funded through the WDFW Aquatic Lands Enhancement Fund.

The role of the Sherman Creek Hatchery in this program is to: (a) establish a kokanee broodstock for future egg requirements; (b) create and enhance the kokanee fishery within Lake Roosevelt; and (c) assist in rainbow trout rearing and fishery enhancement on Lake Roosevelt.

# 2002 ANNUAL OPERATING PLAN

## 2002 ANNUAL PRODUCTION GOAL (APG)

The APG are the goals set fourth for the operation of SCH during the coming year. The Lake Roosevelt Hatchery Coordination Team (LRHCT) reviews the APG which is used to define objectives and provide direction for the program at Sherman Creek.

Table 1. 2002 Annual Production Goal Summary																	
Unit	Fish	Operation	NUMBER	IN	OUT	J	F	M	A	M	J	J	A	S	O	N	D
Rw's	KO	Rearing	300,000	25 / lb	10 / lb			I	X	X	O						
Rw's	RB	Rearing	300,000	90 / lb	15 / lb							I	X	X	X	O	
Rw's	KO	Trapping	Unknown											X	X	X	X
KNP-1	KO	Rearing	300,000	40 / lb	15 / lb	X	X	X	X	X	O					I	X
KNP-2	KO	Rearing	200,000	40 / lb	15 / lb	X	X	X	X	X	O					I	X
KFNP	RB	Rearing	100,000	15 / lb	5 / lb	X	X	X	X	X	O				I	X	X
KFNP	RB	Rearing	60,000	75 / lb	10 / lb	X	X	X	X	X	X	X	X	X		I	X
CFH	RB	Rearing	60,000	Eggs	75 / lb	X	X	O			I	X	X	X	X	X	X
CFH	KO	Spawn	Adults	-	Fry										X	X	X
CFH	KO	Incubate	Eggs	-	Fry	X	O									I	X
Key:		Rw's = Raceways				KO = Kokanee Salmon											
		KNP#1 = Kokanee Net Pens site 1				RB = Rainbow Trout											
		KNP#2 = Kokanee Net Pens site 2				Size = number per / pound											
		KFNP = Kettle Falls Net Pens				I = Received In											
		CFH = Colville Trout Hatchery				O = Transferred or Planted											
Note: These production numbers are included as a portion of this budget. The fish are reared during this budget cycle but some are programmed for release during the next budget cycle.																	

All production numbers, including numbers of fish to be released and sizes at release, are target goals. Actual size and release numbers may be different from these goals. The APG and methods of operation are based on anticipated events at Sherman Creek, Lake Whatcom, Meadow Creek and the Spokane Tribal hatcheries. In the event significant circumstances or operations change, those changes will be reported to the LRHCT and BPA.

## 2002 ANNUAL OPERATION PLAN (AOP) GOALS

TABLE 2. 2002 ANNUAL OPERATING PLAN GOALS		
AOP #	DESCRIPTION	STATUS
2.1	Continue with annual kokanee yearling production.	Completed
2.2	Acclimate and plant 300,000 kokanee yearlings (Mar – July, raceways).	Completed
2.3	Rear and release 500,000 kokanee yearlings, (Oct – June, net pens).	Completed
2.4	Rear 300,000 rainbow trout fingerlings for supply to the Lake Roosevelt net pen sites, (July – Oct).	Completed
2.5	Continue later release dates of all fish reared for improved survival.	Completed
2.6	Continue using semi-moist / high energy feed during low water temperature periods.	Completed
2.7	Construct and operate twenty kokanee net pens on Lake Roosevelt.	Completed
2.8	Use all available means of adult collection for brood stock and program evaluation. These methods include traps, gillnets and electro-fishing.	Completed
2.9	Seek alternate means of adult collection.	Ongoing
2.10	Assist with the cooperative rainbow trout net pen operations on Lake Roosevelt.	Completed

Note: For a full description of the 2002 AOP Goals please refer to the SCH 2002 Annual Operating Plan.

## 2002 ANNUAL OPERATING PLAN OBJECTIVES

The objectives for this contract period were to rear, acclimate, imprint, out plant, trap and spawn kokanee salmon and rear and acclimate rainbow trout to meet the 2002 APG and plan for 2003 operations. The purpose of this program is to enhance the fishery within Lake Roosevelt and to create a return of adult kokanee to Sherman Creek for future broodstock acquisition. We try to accomplish this by following standard operating procedures of the Fish Program, WDFW fish health guidelines, and standard fish hatchery practices.

Table 3. 2002 Annual Operating Plan Objectives.					
AOP #	Objective	Status	AOP #	Objective	Status
3.1	Yearling Acclimation	Completed	3.7	Transfers / Out Planting	Completed
3.2	Yearling Production	Completed	3.8	Adult Trapping	Completed
3.3	Rainbow Trout Rearing	Completed	3.9	Monitor Populations / Adults	Completed
3.4	Fish Health Monitoring	Completed	3.10	Spawning	Completed
3.5	Imprinting Strategies	Completed	3.11	Alternate Brood Stocks	Completed
3.6	Marking / Tagging	Completed	3.12	Training / Contacts	Completed

Note: For a full description of the 2002 AOP Objectives please refer to the SCH 2002 Annual Operating Plan.

## KOKANEE SALMON PRODUCTION

Kokanee salmon production on Lake Roosevelt currently uses two stocks of kokanee. The first stock used is Lake Whatcom from the WDFW hatchery near Bellingham, Washington. Kokanee are native to Lake Whatcom and it has been the state's primary egg source since 1915. The stock is pure, having no known introductions from other kokanee sources (Crawford 1979). The second stock used is Meadow Creek from the British Columbia Ministry of Fisheries spawning channel on Kootenay Lake. Meadow Creek is one of three stocks of kokanee in Kootenay Lake and is a wild stock that reproduces naturally at the north end of the lake.

<b>Table 4. 1992 – 2002 Sherman Creek Hatchery kokanee salmon releases.</b>						
	Fingerlings	Yearlings				Combined Yearling Totals
	Raceways	Raceways		Net Pens		
Stock	Whatcom Hatchery	Whatcom Hatchery	Meadow Wild	Whatcom Hatchery	Meadow Wild	
1992	976,925	45,714				45,714
1993	902,749	85,321				85,321
1994	946,762	73,157		53,002		126,159
1995		203,357		72,252		275,609
1996		215,198		71,055		286,253
1997		216,896		48,417		265,313
1998	87,421	290,028		211,178		501,206
1999		368,622		181,846		550,468
2000		272,166	105,432	197,975		575,573
2001		205,734	101,993		485,260	792,987
2002		231,038		357,068		588,106

In addition to the kokanee releases SCH reared 10,000 captive brood kokanee during 1993.

### RACEWAY PRODUCTION/RELEASES

#### Lot 03 Lake Whatcom BY00

In April 2002, SCH received 233,156 Lot 03 Lake Whatcom kokanee from the Spokane Tribal Hatchery at 11.26 fpp totaling 20,701 pounds for rearing in the raceways at SCH.

Releases of 231,038 adipose clipped kokanee at 9.42 fpp from Lot 03 totaled 24,535 pounds. These were stocked into Lake Roosevelt through the SCH fish ladder on June 26, 2002. During rearing at SCH mortality for Lot 03 was 2,118, or 0.91%, and represented a production gain of 3,834 pounds.

### KOKANEE NET PEN PRODUCTION/RELEASES

#### Lot 01 Lake Whatcom BY00

In October 2001, SCH received 250,463 Lot 01 Lake Whatcom kokanee from the Spokane Tribal Hatchery at 44.4 fpp totaling 5,644 pounds and were transferred into the kokanee net pens at the mouth of the Colville River.

Releases of 247,484 adipose clipped kokanee at 18.1 fpp from Lot 01 totaled 13,648 pounds. These were reared in the Colville River net pens and released on May 26, 2002. During rearing at SCH mortality for Lot 01 was 2,979, or 1.19%, and represented a production gain of 8,004 pounds.

#### **Lot 02 Lake Whatcom BY00**

In November 2001, SCH received 112,658 Lot 02 Lake Whatcom kokanee from the Spokane Tribal Hatchery at 42.0 fpp totaling 2,685 pounds and were transferred into the kokanee net pens at Seven Bays.

Releases, with help from the Volunteer Net Pen Program, of 109,584 adipose-clipped kokanee at 16.7 fpp from Lot 02 totaled 6,582 pounds. The kokanee were reared in the net pens at Seven Bays and released on May 18, 2002. During rearing at Seven Bays mortality for Lot 02 was 3,074, or 2.75%, and represented a production gain of 3,897 pounds.

#### **LOT 04 LAKE WHATCOM BY01**

In October 2002, SCH net pens 15 & 16 were loaded with a total of 46,000 kokanee from the Ford Hatchery at 54.5 fpp, totaling 844 pounds. This lot is scheduled for release in June 2003. These pens are located at the mouth of the Colville River and are part of the precocity study.

#### **LOT 05 LAKE WHATCOM BY01**

In October 2002, SCH net pens 11 – 14, 17 - 18 were loaded with 191,820 kokanee from STH at 56.1 fpp totaling 3,422 pounds. This lot is scheduled for release in June 2003. These pens are located at the mouth of the Colville River.

#### **LOT 06 LAKE WHATCOM BY01**

In October and November 2002, kokanee net pens 19 – 23 were loaded with 174,840 kokanee from STH at 51.1 fpp totaling 3,420 pounds. This lot is scheduled for release in June 2003. These pens are located at the Seven Bays and Lincoln net pen sites.

## RAINBOW TROUT PRODUCTION

Rainbow trout production on Lake Roosevelt is accomplished using net pens to rear fish large enough to counter predation and to hold them past spring draw downs to reduce entrainment through Grand Coulee Dam. We are currently using two stocks of rainbows in the program. The first stock is Spokane rainbows, which historically have provided a very successful and popular sports fishery on Roosevelt. We now are testing both diploid and triploid Spokane stock rainbows to see what effect the triploids may have on creel returns and impacts on native fish in the system. The second stock we are using is the wild Phalon Lake redband trout, which are from tributaries of the Kettle River, (a tributary of the Upper Columbia).

The Lake Roosevelt Fisheries Evaluation Program, (LRFEP), conducts the monitoring and evaluation of the net pen program.

### RACEWAY PRODUCTION/TRANSFERS

In 1995 SCH began an annual summer fingerling program of rearing rainbow trout in our raceways for fall net pen stocking. This frees up water and rearing space at the STH enabling them to rear additional kokanee to further our efforts on Lake Roosevelt and Banks Lake.

<b>Table 5. Sherman Creek Hatchery Summer raceway rearing for fall transfer.</b>			
<b>Year</b>	<b>Number Reared</b>	<b>Species</b>	<b>Operation</b>
1993	10,000	Kokanee Brood	Captive Brood
1995	101,116	Rainbow Trout	Fingerling Production
1996	142,072	Rainbow Trout	Fingerling Production
1997	140,359	Rainbow Trout	Fingerling Production
1998	192,461	Rainbow Trout	Fingerling Production
1999	238,139	Rainbow Trout	Fingerling Production
2000	197,379	Rainbow Trout	Fingerling Production
2001	249,560	Rainbow Trout	Fingerling Production
2002	266,217	Rainbow Trout	Fingerling Production

### LOT 13 SPOKANE BY01

In July 2002, we received 297,213 Spokane diploid rainbow trout at 44.18 fpp totaling 6,727 pounds from the Spokane Tribal Hatchery. These fish were used to stock the volunteer net pens in October 2002. This summer we encountered higher than normal mortality due to outbreaks of both columnaris bacteria and cannibalism in the raceway population. We tried a number of strategies to counteract the losses, most notably potassium permanganate and oxytetracycline treatments, along with feed diet changes. We will be evaluating the outcomes and looking at strategies for next years operations in an attempt to prevent a recurrence. Antibiotics, loading densities and feed types are some of the directions we are discussing with fish health staff.

In October 2002, SCH transferred 266,217 rainbows at 14.2 fpp totaling 18,725 pounds to the Lake Roosevelt Volunteer Net Pen Program. These fish are scheduled for release in June 2003. These fish had a raceway-reared mortality of 30,996 or 10.4%. This growth period represented a production gain of 11,998 pounds.

<b>Table 6. Sherman Creek Hatchery 2002 rainbow trout transfers.</b>			
<b>Number</b>	<b>Size / fpp</b>	<b>Pounds</b>	<b>Location</b>
59,904	12.8	4,680	Kettle Falls Net Pens
61,927	15.1	4,115	Hall Creek Net Pens
62,438	14.5	4,320	Hunters Net Pens
75,036	14.8	5,070	Seven Bays Net Pens
6,912	12.8	540	Lincoln Net Pens
266,217	14.2	18,725	Total Transferred

### **NET PEN PRODUCTION/RELEASES**

In cooperation with the Volunteer Net Pen Program (LRDA), SCH staff operates six net pens at Kettle Falls. In 2000, the Volunteer Net Pen Program began reporting all hatchery stock rainbow net pen releases while SCH still reports the wild stock releases.

<b>Table 7. Sherman Creek Hatchery wild rainbow net pen releases.</b>					
<b>Year</b>	<b>Stock</b>	<b>Number</b>	<b>Size / FPP</b>	<b>Pounds</b>	<b>Brood Year</b>
1999	Phalon Lake	9,725	2.34	4,155.7	1998
2000	Phalon Lake	32,449	7.80	4,160.9	1999
2001	Phalon Lake	58,859	6.70	8,820.5	2000
2002	Trout Lodge	45,714	3.34	13,703.3	2001

The Trout Lodge stock triploids were substituted for the unavailable wild rainbows normally released.

We are incorporating increased use of native or locally adaptive stocks of redband rainbow trout in our net pen program and monitoring their performance as per the recommendations of the Lake Roosevelt Fisheries Evaluation Program.

The Lake Roosevelt Fisheries Evaluation Program, (LRFEP), performs the monitoring and evaluation of the net pen program.

### **Lot 12 Trout Lodge Triploids BY01**

Since the wild rainbow trout were unavailable for our net pens in the fall of 2001 the Colville Confederated Tribes supplied us with triploid rainbows to rear in their place.

In January 2002, Trout Lodge delivered 50,000 rainbow trout at 18.0 fpp totaling 2,777 pounds to our net pens at the mouth of the Colville River. These fish were reared until September 2002 and released the same as with the wild rainbow program in years past. We will resume our use of wild rainbows this fall.

In September 2002, we released 45,714 Trout Lodge triploid rainbows from the Kettle Falls Net Pen site at 3.34 fpp totaling 13,703.3 pounds. 10,000 of these fish were floy tagged by LRFEP to monitor their contribution in the fishery. During rearing in the net pens mortality for this lot was 4,286 or 8.57%. This represented a production gain of 10,578.3 pounds. The higher than normal mortality was the direct result of gas super saturation in Lake Roosevelt, due to the 2002 hydro-operations during the summer months.

**LOT 13 PHALON LAKE BY02**

In October 2002, SCH net pens 7-8 were loaded with 30,089 native redband rainbow from Colville Trout Hatchery at 82.0 fpp totaling 367 pounds. This is half of the planned 60,000 scheduled for release in September 2003. These pens are located at the mouth of the Colville River.

## ADULT KOKANEE COLLECTED

These fish were collected using a combination of methods but primarily through boat electro-fishing. The fish collected were of known hatchery origin with fin clips and/or coded wire tag implants. Additional adult origin and trapping information is available through Eastern Washington University and the Lake Roosevelt Fisheries Evaluation Program.

### 2002 ADULT TRAPPING/COLLECTION

During 2002 adult kokanee were collected by EWU using a boat electrofisher. A total of 274 hatchery and 3 wild kokanee were collected at Sherman Creek with Meyers Falls adding another 21 hatchery and 2 wild kokanee. These fish were identified as both Lake Whatcom and Meadow Creek origin through coded wire tag analysis and fin clips by staff at EWU Fisheries Center. This information is further explained in the following table provided by EWU (McLellan, 2002).

Fin Clip	Female	Male	Unknown	Total
AD-	17	241	4	262
AD+	2	1		3
ADLP-		2		2
ADLPRV-		3		3
ADRP-	1	2		3
ADRV-		1		1
NO-	1	2		3
Grand Total	21	252	4	277

The following table represents the coded wire tag analysis done at Eastern Washington University from the returning adults collected at Sherman Creek (McLellan, 2001 & 2002).

Stock	(age) Year	CWT #	# Stocked	# Recovered	Recovery %	$\chi^2$	P-value
<b>Experiment 1</b>							
Lake Whatcom	(2) 2000	62-03-34	74,669	197	0.26		
Meadow Creek	(2) 2000	62-03-35	83,291	1,337	1.61	736.6	< 0.01
Lake Whatcom	(3) 2001	62-03-34		6			
Meadow Creek	(3) 2001	62-03-35		7		-	-
Lake Whatcom	(4) 2002	62-03-34		1		-	-
<b>Experiment 2</b>							
Lake Whatcom	(2) 2001	62-02-62&64	89,547	198	0.22		
Meadow Creek	(2) 2001	62-02-98&99	80,574	488	0.61	156.2	< 0.01
Lake Whatcom	(3) 2002	62-02-62&64		2			
Meadow Creek	(3) 2002	62-02-98&99		0		-	-

Analysis by EWU Fisheries Center (McLellan, 2001 & 2002).

<b>Table 10. 1993 – 2002 Adult kokanee recovered at Sherman Creek.</b>				
<b>Year</b>	<b>Males</b>	<b>Females</b>	<b>Unknown</b>	<b>Total</b>
1993				60
1994				81
1995				10
1996				970
1997	374	22		396
1998				2,471
1999	1,292	35		1,327
2000	2,302	233	119	2,658
2001	1,160	126	90	1,376
2002	252	21	4	277

## **MONITORING AND EVALUATION**

The Lake Roosevelt Fisheries Evaluation Program performs monitoring and evaluations. Since 1988, the principle sport fishery on Lake Roosevelt has shifted from walleye to include rainbow trout and kokanee salmon (Underwood et al. 1997, Tilson and Scholz 1997). The angler use, harvest rates for rainbow and kokanee and the economic value of the fishery has increased substantially during this 10-year period. The most recent information from the monitoring program also suggests that the hatchery and net pen rearing programs have been beneficial to enhancing the Lake Roosevelt fishery while not negatively impacting wild and native stocks within the lake.

SCH assists in the monitoring and evaluation efforts through marking coordination, data collection, and database coordination.. Information collected and compiled is being used to improve on operations throughout Lake Roosevelt. This information is made available to other natural resource agencies and is also available through the BPA web site.

# **HATCHERY OPERATIONS AND MAINTENANCE**

## **MAINTENANCE AND CONSTRUCTION PROJECTS**

Operations and maintenance were performed according to state of Washington and WDFW policies and guidelines.

The hatchery crew was involved with a variety of projects both with fish handling and facility operations. Some of the projects completed this year were: raceway predator netting, roadway and grounds maintenance, facility safety modifications, feed dock construction, building repairs and maintenance, water festival and facility site improvements including habitat plantings and noxious weed control.

## **RESIDENCE IMPROVEMENTS**

Continued with residence finish work as hatchery workload and time was available.

## **STREAM MAINTENANCE**

We continue to monitor streambed levels and perform annual maintenance including gravel removal as necessary. This is covered under a blanket Hydraulics Permit for the maintenance and operation of the hatchery water system.

## **DOCK CONSTRUCTION**

In December 2002 we finished construction of a 14' x 20' feed dock for the Kettle Falls site. This dock serves as the feed storage / work platform and as access for visitors to view the net pen operations.

We now have a courtesy dock at Sherman Creek that allows visitors to access the hatchery from Lake Roosevelt. This was also a major safety improvement for operations on Roosevelt and at Sherman Creek Hatchery. We have set up all of our docks as modular units which we move from site to site depending on time of year and needs of the program.

## **EQUIPMENT PURCHASES**

### **FEEDERS**

The solar powered fish feeders were installed in April 2002 and have improved net pen operations by providing feed during the non-work hours. We are monitoring growth and condition of the fish and believe we are already seeing improved performance from the feeders.

## **FEED BARGE**

The feed barge has been a great asset to the project. We not only use it for moving feed, pens and docks, but also have used it to help with the fishing derby and data collection efforts on Lake Roosevelt.

## **1,500 GALLON FISH TRANSPORT TANK**

We are working with Magic Valley Heili-Arc on the 1,500-gallon fish transport tank that is scheduled for delivery in mid February 2003. Since current operations have increased fish transport needs throughout the reservoir, getting the tanker up and running will help all of the hatchery projects on Lake Roosevelt.

## **FUTURE MODIFICATIONS IDENTIFIED**

- Continue looking for ways of reducing silt and debris entering the head box through the intake screen on Sherman Creek. WDFW Engineering has suggested replacing the wedge wire intake screen with smaller slots to reduce silt entering the system. We will look in to the costs associated with the change over during 2003.
- The number of fish transfers in and out of the SCH has increased from seven loads in 1992 to forty-seven 1,000 pound loads in 2001. This lead to the purchase of a planting tank in the 2002 budget. Ultimately, the leasing or purchasing of a truck will be necessary to complete transfers. This is even more important now that the Hatchery Coordination Team has requested open water releases of the raceway kokanee to offset predation in the cove.

## **COOPERATIVE PROJECTS**

The hatchery staff represented WDFW and BPA on the Lake Roosevelt Water Festival Organization Committee, which prepares for the annual fourth-grade event. SCH and BPA were joint presenters for the eight year at the water festival, providing hands on instruction to more than 500 students from the surrounding area.

### **Two Rivers Fishing Derby**

This year we assisted the LRFEP with data collection at the Two Rivers Fishing Derby in August. The number and size of hatchery fish caught was very impressive. It was nice to hear the praise the fisherman had for the hatchery and net pen programs.

### **Lake Roosevelt Fall Coordination Team Meeting**

Sherman Creek Hatchery hosted the annual fall coordination team meeting on September 17, 2002. This method of coordinating programs continues to improve our efforts and provide for a more consistent approach to fishery management on Lake Roosevelt and Banks Lake.

## **PERSONNEL**

SCH was operated during 2002 with two FTE's; Mitch Combs, Fish Hatchery Specialist 3 and Jeffrey Weathermen, Fish Hatchery Specialist 2 with administrative and complex support from Mike Lewis, Complex Manager and Jon Lovrak, Fish Hatchery Specialist 4. Steve Roberts, Fish Health Specialist, provided fish health services for both SCH and STH.

During 2002 hatchery staff received training in the following areas: computer applications, fish health, aqua culture techniques, fisheries management, pesticide application, ethics, boat handling, first aid and safety.

In March, SCH personnel attended the 28th Annual International Kokanee Workshop in Kalispell, MT. This workshop is the annual inter-agency exchange of kokanee culture and management strategies between our projects and the surrounding area including Canada.

## REFERENCES

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- Lee, C. 2002. 2002 Two Rivers Trout Derby, 2002. Lake Roosevelt Fisheries Evaluation Program.
- McLellan, H. 2002. Lake Whatcom vs. Meadow Creek stock kokanee salmon investigations in Lake Roosevelt, 2000-2002. Eastern Washington University.
- Underwood, K.D. and J.P. Shields and M.B. Tilson. 1997. Lake Roosevelt Fisheries Monitoring Program, 1995 Annual Report in K.D. Underwood and J.P. Shields. Lake Roosevelt fisheries research, 1995 annual report. Bonneville Power Administration.

**Appendix A**  
**SCH 2002 Planting Report Summary**

<b>SHERMAN CREEK HATCHERY 2002 PLANTING REPORT SUMMARY</b>											
<b>#</b>	<b>(Spc:Stk:BY:BO)</b>	<b>Unit</b>	<b>Date</b>	<b>Water Name</b>	<b>Site</b>	<b>NUMBER</b>	<b>Size</b>	<b>Pounds</b>	<b>CWT</b>	<b>Mark</b>	<b>Lot</b>
01	KO:WHAL:00:H	K-NP#7	05/26	Roosevelt, Lake	Colville River	30,835	19.4	1,589.4		Ad clipped	01
02	KO:WHAL:00:H	K-NP#8	05/26	Roosevelt, Lake	Colville River	30,874	17.4	1,774.4		Ad clipped	01
03	KO:WHAL:00:H	K-NP#9	05/26	Roosevelt, Lake	Colville River	30,739	18.6	1,652.6		Ad clipped	01
04	KO:WHAL:00:H	K-NP#10	05/26	Roosevelt, Lake	Colville River	31,362	20.4	1,537.4		Ad clipped	01
05	KO:WHAL:00:H	K-NP#11	05/26	Roosevelt, Lake	Colville River	30,769	17.0	1,809.9		Ad clipped	01
06	KO:WHAL:00:H	K-NP#12	05/26	Roosevelt, Lake	Colville River	30,854	17.4	1,773.2		Ad clipped	01
07	KO:WHAL:00:H	K-NP#13	05/04	Roosevelt, Lake	Colville River	30,951	18.1	1,710.0		Ad clipped	01
08	KO:WHAL:00:H	K-NP#14	05/29	Roosevelt, Lake	Colville River	31,100	16.8	1,851.2		Ad clipped	01
09	KO:WHAL:00:H	7-Bays#1	05/18	Roosevelt, Lake	Seven Bays Net Pens	24,621	14.1	1,746.0		Ad clipped	02
10	KO:WHAL:00:H	7-Bays#2	05/18	Roosevelt, Lake	Seven Bays Net Pens	24,872	13.8	1,802.0		Ad clipped	02
11	KO:WHAL:00:H	7-Bays#3	05/18	Roosevelt, Lake	Seven Bays Net Pens	30,112	19.8	1,520.0		Ad clipped	02
12	KO:WHAL:00:H	7-Bays#4	05/18	Roosevelt, Lake	Seven Bays Net Pens	29,979	16.7	1,514.0		Ad clipped	02
13	KO:WHAL:00:H	RW-1	06/26	Roosevelt, Lake	Sherman Creek	82,256	10.8	7,616.3		Ad clipped	03
14	KO:WHAL:00:H	RW-2	06/26	Roosevelt, Lake	Sherman Creek	82,624	8.3	9,954.7		Ad clipped	03
15	KO:WHAL:00:H	RW-3	06/26	Roosevelt, Lake	Sherman Creek	66,158	9.5	6,964.0		Ad clipped	03

**Appendix B**  
**Lake Roosevelt Volunteer Net Pen 2002 Planting Report Summary**

**LAKE ROOSEVELT VOLUNTEER NET PEN 2002 PLANTING REPORT SUMMARY**

#	(Spc:Stk:BY:BO)	Unit	Date	Water Name	Site	NUMBER	SIZE	Pounds	CWT	Mark	Lot
01	RB:SPOK:00:H	NP#1	05/15	Roosevelt, Lake	Kettle Falls Net Pens	13,512	8.2	1,647.8			10
02	RB:SPOK:00:H	NP#2	05/15	Roosevelt, Lake	Kettle Falls Net Pens	13,065	8.4	1,555.4			10
03	RB:SPOK:00:H	NP#3	05/29	Roosevelt, Lake	Kettle Falls Net Pens	10,000	7.6	1,315.8	Floy Tag: EWU - Orange		10
04	RB:SPOK:00:H	NP#3	05/29	Roosevelt, Lake	Kettle Falls Net Pens	6,192	5.8	1,067.6			10
05	RB:SPOK:00:H	NP#5	05/15	Roosevelt, Lake	Kettle Falls Net Pens	12,956	4.0	3,239.0		Triploid	11
06	RB:SPOK:00:H	NP#6	05/15	Roosevelt, Lake	Kettle Falls Net Pens	14,281	5.6	2,550.0		Triploid	11
07	RB:SPOK:00:H	NP#1	05/23	Roosevelt, Lake	Hall Creek Net Pens	9,872	5.1	1,935.0			
08	RB:SPOK:00:H	NP#2	05/23	Roosevelt, Lake	Hall Creek Net Pens	9,912	5.1	1,943.0			
09	RB:SPOK:00:H	NP#3	05/23	Roosevelt, Lake	Hall Creek Net Pens	10,132	5.6	1,809.0			
10	RB:SPOK:00:H	NP#4	05/23	Roosevelt, Lake	Hall Creek Net Pens	9,811	5.3	1,923.0			
11	RB:SPOK:00:H	NP#1	06/06	Roosevelt, Lake	Hunters Net Pens	14,880	4.6	3,234.0			
12	RB:SPOK:00:H	NP#2	06/06	Roosevelt, Lake	Hunters Net Pens	15,112	5.1	2,963.0			
13	RB:SPOK:00:H	NP#3	06/06	Roosevelt, Lake	Hunters Net Pens	14,433	4.8	3,006.0			
14	RB:SPOK:00:H	NP#4	06/06	Roosevelt, Lake	Hunters Net Pens	14,679	5.3	2,769.0			
15	RB:SPOK:00:H	NP#1	06/11	Roosevelt, Lake	Two Rivers Net Pens	12,342	6.2	1,991.0			
16	RB:SPOK:00:H	NP#2	06/11	Roosevelt, Lake	Two Rivers Net Pens	12,318	5.6	2,200.0			
17	RB:SPOK:00:H	NP#3	06/11	Roosevelt, Lake	Two Rivers Net Pens	12,523	4.9	2,556.0			
18	RB:SPOK:00:H	NP#4	06/11	Roosevelt, Lake	Two Rivers Net Pens	12,686	3.3	3,844.0			
19	RB:TROU:00:H	NP#5	06/11	Roosevelt, Lake	Two Rivers Net Pens	16,877	9.1	1,855.0		Triploid	
20	RB:SPOK:00:H	NP#1	05/20	Roosevelt, Lake	Seven Bays Net Pens	14,440	5.1	2,831.0			
21	RB:SPOK:00:H	NP#2	05/20	Roosevelt, Lake	Seven Bays Net Pens	11,890	6.6	1,802.0			
22	RB:SPOK:00:H	NP#3	05/20	Roosevelt, Lake	Seven Bays Net Pens	12,230	5.7	2,146.0			
23	RB:SPOK:00:H	NP#4	05/20	Roosevelt, Lake	Seven Bays Net Pens	2,211	7.1	311.0	Floy Tag: EWU - Orange		

**LAKE ROOSEVELT VOLUNTEER NET PEN 2002 PLANTING REPORT SUMMARY**

#	(Spc:Stk:BY:BO)	Unit	Date	Water Name	Site	NUMBER	Size	Pounds	CWT	Mark	Lot
24	RB:SPOK:00:H	NP#4	05/20	Roosevelt, Lake	Seven Bays Net Pens	9,999	7.1	1,408.0			
25	RB:SPOK:00:H	NP#5	05/20	Roosevelt, Lake	Seven Bays Net Pens	14,894	6.1	2,442.0			
26	RB:SPOK:00:H	NP#6	05/20	Roosevelt, Lake	Seven Bays Net Pens	14,827	5.4	2,746.0		Triploid	
27	RB:SPOK:00:H	NP#7	05/20	Roosevelt, Lake	Seven Bays Net Pens	14,817	4.9	3,024.0		Triploid	
28	RB:SPOK:00:H	NP#8	05/20	Roosevelt, Lake	Seven Bays Net Pens	15,221	5.8	2,624.0			
29	RB:SPOK:00:H	NP#1	05/22	Roosevelt, Lake	Lincoln Net Pens	14,892	5.9	2,524.0			
30	RB:SPOK:00:H	NP#2	05/22	Roosevelt, Lake	Lincoln Net Pens	14,812	7.0	2,116.0			
31	RB:SPOK:00:H	NP#3	05/22	Roosevelt, Lake	Lincoln Net Pens	14,671	5.6	2,620.0			
32	RB:SPOK:00:H	NP#4	05/22	Roosevelt, Lake	Lincoln Net Pens	14,887	5.8	2,567.0			
33	RB:SPOK:00:H	NP#5	05/22	Roosevelt, Lake	Lincoln Net Pens	14,991	5.5	2,726.0			
34	RB:SPOK:00:H	NP#6	05/22	Roosevelt, Lake	Lincoln Net Pens	14,712	5.4	2,724.0			
35	RB:SPOK:00:H	NP#7	05/22	Roosevelt, Lake	Lincoln Net Pens	14,621	5.2	2,812.0			
36	RB:SPOK:00:H	NP#8	05/22	Roosevelt, Lake	Lincoln Net Pens	14,654	5.3	2,765.0			
37	RB:SPOK:00:H	NP#9	05/22	Roosevelt, Lake	Lincoln Net Pens	15,012	5.4	2,780.0			
38	RB:SPOK:00:H	NP#10	05/22	Roosevelt, Lake	Lincoln Net Pens	14,727	4.7	3,133.0			
39	RB:SPOK:00:H	NP#1	05/22	Roosevelt, Lake	Keller Ferry Net Pen	12,206	3.1	3,937.0			
40	RB:SPOK:00:H	NP#2	05/22	Roosevelt, Lake	Keller Ferry Net Pen	12,242	3.2	3,825.0			
41	RB:TROU:00:H	NP#3	06/07	Roosevelt, Lake	Keller Ferry Net Pens	16,112	9.1	1,771.0		Triploid	
42	RB:TROU:00:H	NP#4	06/07	Roosevelt, Lake	Keller Ferry Net Pens	16,138	9.1	1,773.0		Triploid	
43	RB:TROU:00:H	NP#16	09/12	Roosevelt, Lake	Kettle Falls Net Pens	10,000	3.6	2,777.8	Floy Tag: EWU – Grey	Triploid	
44	RB:TROU:00:H	NP#18	09/12	Roosevelt, Lake	Kettle Falls Net Pens	13,285	3.6	3,690.3		Triploid	
45	RB:TROU:00:H	NP#15	09/30	Roosevelt, Lake	Kettle Falls Net Pens	10,753	3.1	3,468.7		Triploid	
46	RB:TROU:00:H	NP#17	09/30	Roosevelt, Lake	Kettle Falls Net Pens	11,676	3.1	3,766.5		Triploid	

**Appendix C**  
**STH 2002 Lake Roosevelt / Banks Lake Planting Report Summary**

**SPOKANE TRIBAL HATCHERY 2002 LAKE ROOSEVELT / BANKS LAKE PLANTING REPORT SUMMARY**

<b>#</b>	<b>(Sp:Stk:BY:BO)</b>	<b>Unit</b>	<b>Date</b>	<b>Water Name</b>	<b>Site</b>	<b>NUMBER</b>	<b>Size</b>	<b>Pounds</b>	<b>CWT</b>	<b>Mark</b>	<b>Lot</b>
01	KO:WHAL:00:H	STH	05/15	Roosevelt, Lake	Fort Spokane	12,448	8.0	1,556		Right pectoral & ad clipped	
02	KO:WHAL:00:H	STH	05/15	Roosevelt, Lake	Fort Spokane	12,280	8.0	1,535		Right pectoral & ad clipped	
03	KO:WHAL:00:H	STH	05/16	Roosevelt, Lake	Little Falls Dam	12,456	8.0	1,557		Left pectoral & ad clipped	
04	KO:WHAL:00:H	STH	05/16	Roosevelt, Lake	Little Falls Dam	12,656	8.0	1,582		Left pectoral & ad clipped	
05	KO:WHAL:00:H	STH	05/29	Roosevelt, Lake	Colville River	17,000	8.0	2,125		Right vent, left pectoral & ad clip	
06	KO:WHAL:00:H	STH	05/30	Banks, Lake	Steamboat	171,000	450	380		Marked w / OTC x 10 days @4%	
07	KO:WHAL:00:H	STH	05/31	Banks, Lake	Steamboat	171,000	450	380		Marked w / OTC x 10 days @4%	
08	KO:WHAL:00:H	STH	10/10	Banks, Lake	Steamboat	50,050	55	910		Marked w / OTC x 10 days @4%	

Note: For a complete listing of plants into Banks Lake please refer to WDFW, Hatcheries Division Plants Report.

**Appendix D**  
**CCT 2001 – 2002 Lake Roosevelt Planting Report Summary**

**COLVILLE CONFEDERATED TRIBES 2001 – 2002 LAKE ROOSEVELT PLANTING REPORT SUMMARY**

#	(Spc:Stk:BY:BO)	Unit	Date	Water Name	Site	NUMBER	SIZE	Pounds	CWT	Mark	Lot
01	RB:TROU:00:H	Truck	11/13/01	Roosevelt, Lake	Kettle Falls Marina	6,000	.543	11,040.0		Triploid-Floy Tag:EWU-Yellow	
02	RB:TROU:00:H	Truck	11/20/01	Roosevelt, Lake	Two Rivers Marina	3,000	.543	5,520.0		Triploid-Floy Tag:EWU-Yellow	
03	RB:TROU:00:H	Truck	11/13/01	Roosevelt, Lake	Keller Ferry Marina	3,098	.543	5,700.0		Triploid-Floy Tag:EWU-Yellow	
04	RB:TROU:00:H	Truck	06/04/02	Roosevelt, Lake	Keller Boat Launch	430	.286	1,503.5			Triploid
05	RB:TROU:00:H	Truck	06/04/02	Roosevelt, Lake	Keller Boat Launch	439	.286	1,535.0			Triploid
06	RB:TROU:00:H	Truck	06/04/02	Roosevelt, Lake	Kettle Falls Marina	438	.286	1,531.5			Triploid
07	RB:TROU:00:H	Truck	06/04/02	Roosevelt, Lake	Inchelium Ferry	400	.286	1,398.6			Triploid
08	RB:TROU:00:H	Truck	06/04/02	Roosevelt, Lake	Inchelium Ferry	401	.286	1,402.1			Triploid
09	RB:TROU:00:H	Truck	06/05/02	Roosevelt, Lake	Keller Boat Launch	404	.286	1,412.6			Triploid
10	RB:TROU:00:H	Truck	06/05/02	Roosevelt, Lake	Keller Boat Launch	402	.286	1,405.6			Triploid
11	RB:TROU:00:H	Truck	06/05/02	Roosevelt, Lake	Inchelium Ferry	527	.286	1,842.7			Triploid
12	RB:TROU:00:H	Truck	06/05/02	Roosevelt, Lake	Inchelium Ferry	536	.286	1,874.1			Triploid
13	RB:TROU:00:H	Truck	06/06/02	Roosevelt, Lake	Snag Cove	403	.286	1,409.1			Triploid
14	RB:TROU:00:H	Truck	06/06/02	Roosevelt, Lake	French Rocks	404	.286	1,412.6			Triploid
15	RB:TROU:00:H	Truck	06/06/02	Roosevelt, Lake	Snag Cove	527	.286	1,842.7			Triploid
16	RB:TROU:00:H	Truck	06/07/02	Roosevelt, Lake	French Rocks	529	.286	1,850.0			Triploid
17	RB:TROU:00:H	Truck	06/07/02	Roosevelt, Lake	Little Falls Dam	402	.286	1,405.6			Triploid
18	RB:TROU:00:H	Truck	06/18/02	Roosevelt, Lake	Northport Boat Ramp	411	.286	1,437.1			Triploid
19	RB:TROU:00:H	Truck	06/18/02	Roosevelt, Lake	China Bend Ramp	407	.286	1,423.1			Triploid
20	RB:TROU:00:H	Truck	06/18/02	Roosevelt, Lake	Snag Cove	405	.286	1,416.1			Triploid
21	RB:TROU:00:H	Truck	06/18/02	Roosevelt, Lake	Northport Boat Ramp	410	.286	1,433.6			Triploid
22	RB:TROU:00:H	Truck	06/19/02	Roosevelt, Lake	China Bend Ramp	408	.286	1,426.6			Triploid
23	RB:TROU:00:H	Truck	06/19/02	Roosevelt, Lake	Two Rivers Marina	405	.286	1,416.1			Triploid

**Appendix E**  
**Ford Hatchery 2002 Lake Roosevelt / Banks Lake Planting Report Summary**

**FORD HATCHERY 2002 LAKE ROOSEVELT / BANKS LAKE PLANTING REPORT SUMMARY**

<b>#</b>	<b>(Spc:Stk:BY:BO)</b>	<b>Unit</b>	<b>Date</b>	<b>Water Name</b>	<b>Site</b>	<b>NUMBER</b>	<b>Size</b>	<b>Pounds</b>	<b>CWT</b>	<b>Mark</b>	<b>Lot</b>
01	KO:WHAL:01:M	Hatchery	10/07	Banks Lake	Northrup Creek	44,432	70.0	635.0		Marked w/ OTC & Left vent clip	
02	KO:WHAL:01:M	Hatchery	10/07	Banks Lake	Northrup Creek	21,064	70.2	300.0		Marked w/ OTC	
03	KO:WHAL:01:M	P 5,6,12	10/08	Banks Lake	Northrup Creek	214,941	69.9	3,074.0		Marked w/ OTC	
04	KO:WHAL:01:M	P3, 9-11	10/09	Banks Lake	Northrup Creek	215,462	66.8	3,225.0		Marked w/ OTC	
05	KO:WHAL:01:M	P3	10/09	Banks Lake	Northrup Creek	71,164	62.0	1,148.0		Marked w/ OTC & Left vent clip	
06	KO:WHAL:01:M	P4	10/10	Banks Lake	Northrup Creek	72,000	66.4	1,085.0		Marked w/ OTC	

Note: For a complete listing of plants into Banks Lake including other funding sources than BPA, please refer to WDFW, Hatcheries Division Plants Report.